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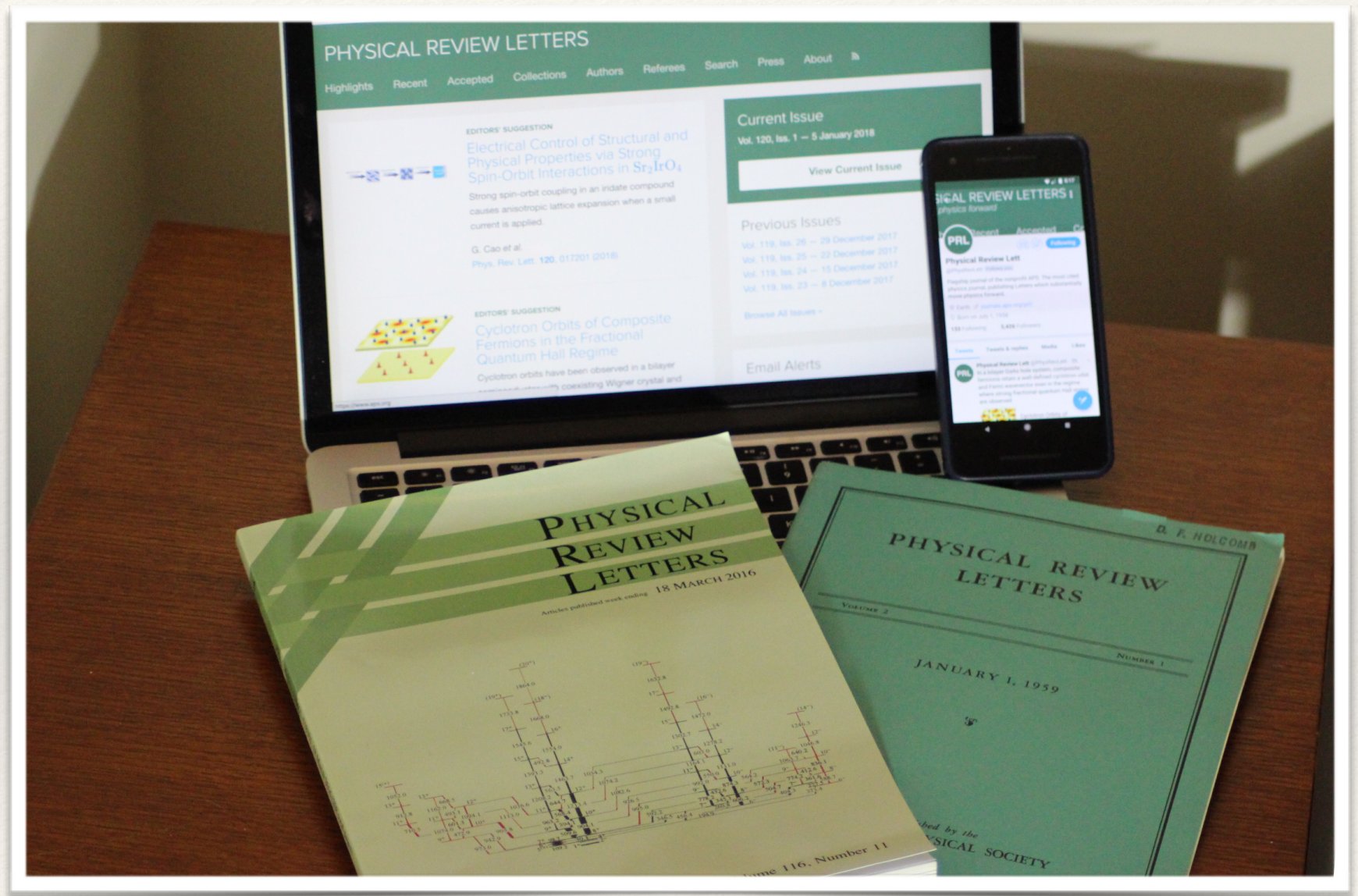
# From protons to peer review:

## Life as an editor for Physical Review

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Kevin Dusling  
Associate Editor  
Physical Review Letters

2019 RHIC & AGS  
Annual Users' Meeting



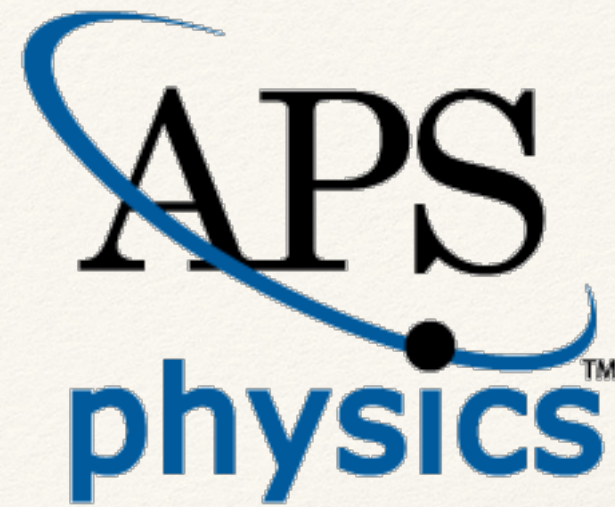


- How I got here
- About PRL
- A day in the life
- Advice for authors and referees



# The American Physical Society

*“advance and diffuse the knowledge of physics”*

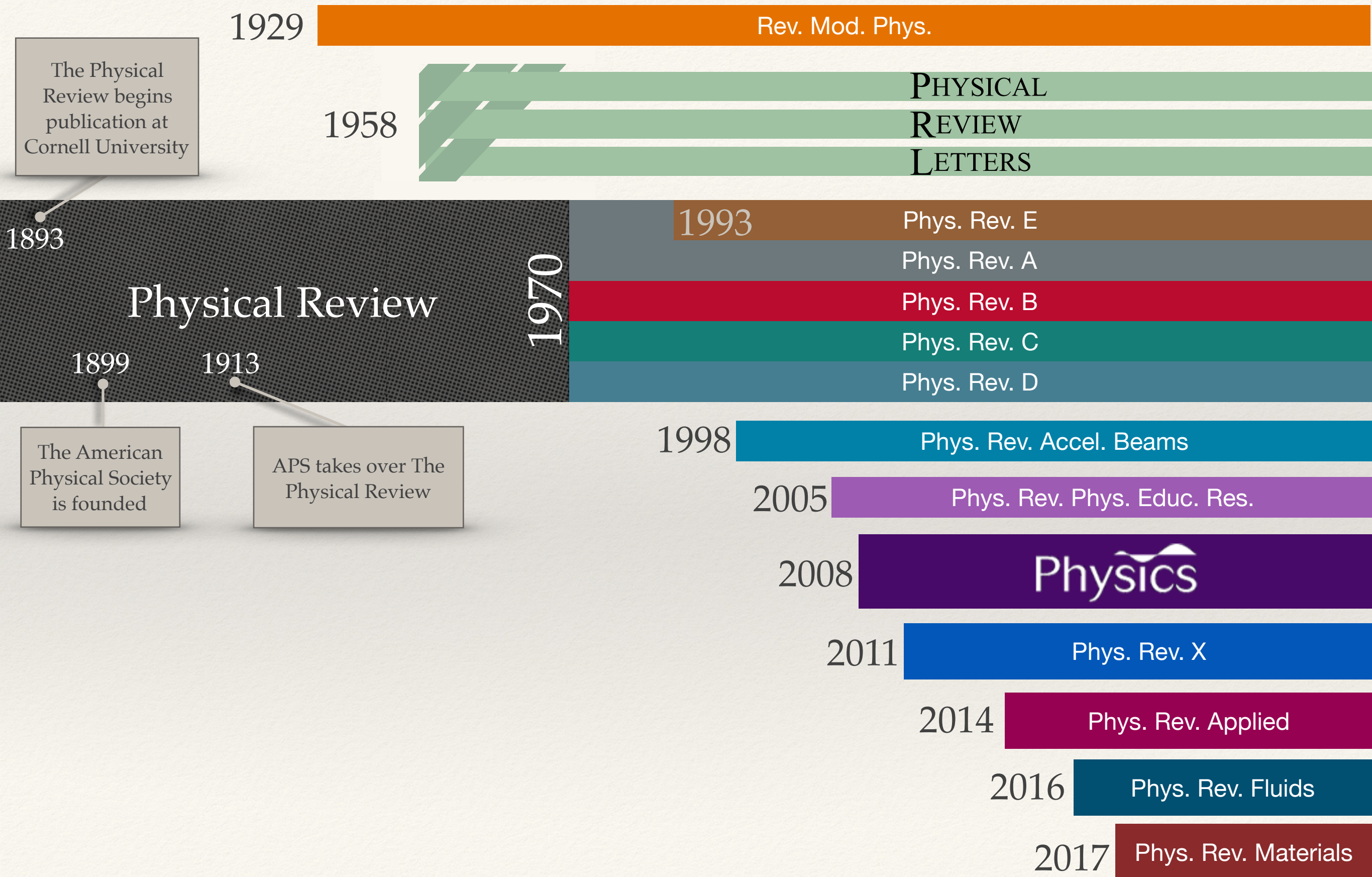


Education & Diversity	Outreach
Policy / Advocacy	International Affairs

- Meetings
  - March Meeting: 9,000 — 10,000 attendees
  - April Meeting: 1,200 — 1,400 attendees
  - Division Meetings (DFD, DPP, DPF, DNP, DAMOP)
  - *Physics Next*
- Journals
  - Suite of 13 high profile journals (“The Physical Review Family”)



# Physical Review: A Timeline





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# The Physical Review Today

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- Suite of 13 (soon 14) high profile journals ("The Physical Review Family")
  - Receive about 40,000 manuscripts annually
  - About 20,000 are published following peer review
  - 160 Editors of 37 nationalities
- 3% of all physics journals
- 15% of all physics articles
- 30% of all physics citation



# PHYSICAL REVIEW RESEARCH

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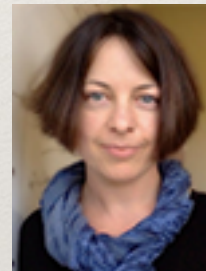


# Physical Review Letters

*Physical Review Letters* (PRL) is the world's premier physics letter journal and the American Physical Society's flagship publication. —“every two minutes someone cites a PRL”



Hugues Chaté  
CEA-Saclay, France





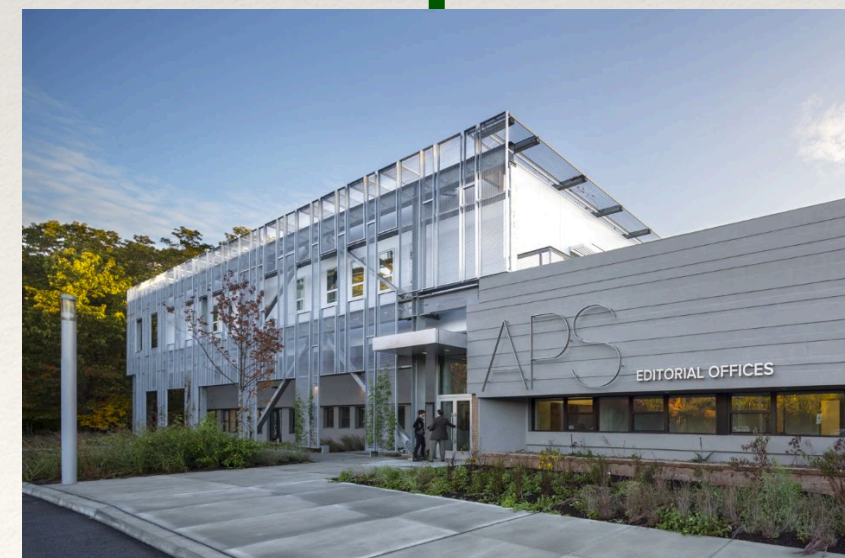
# Life of an Editor: A Timeline



2000

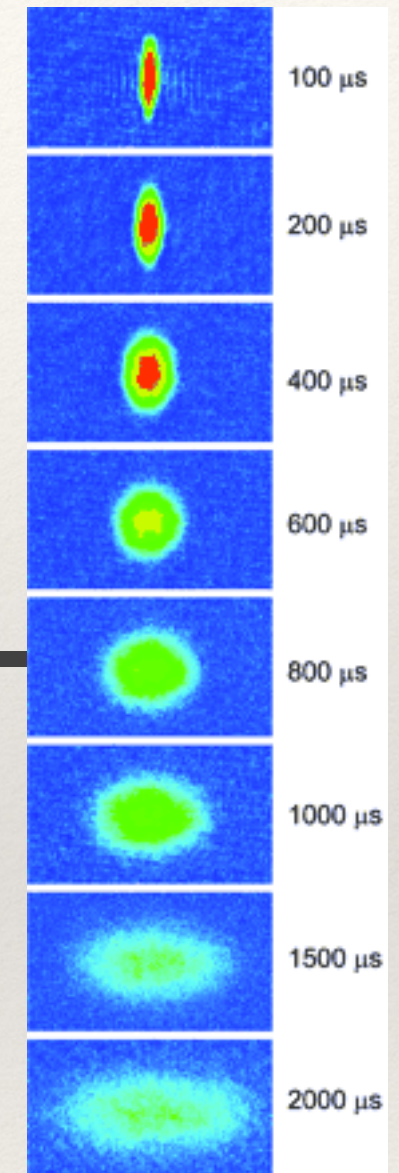
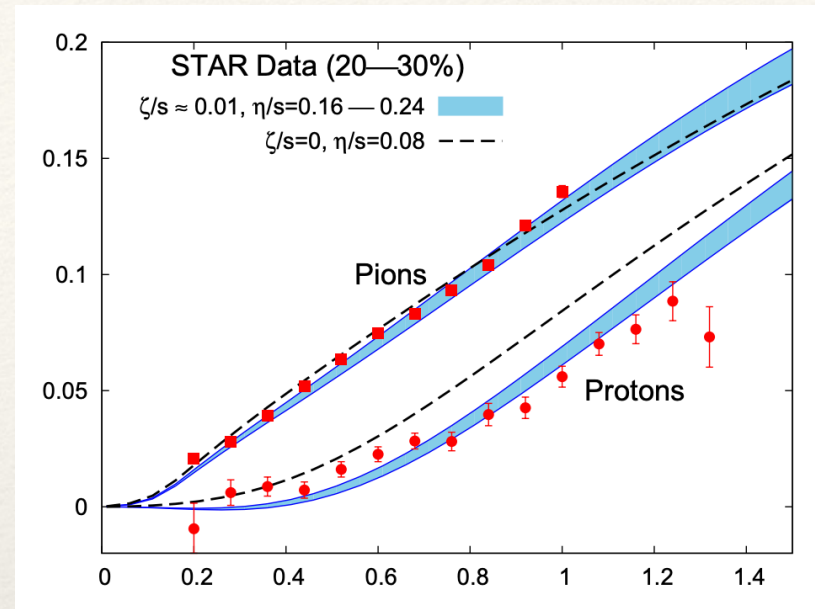


2013

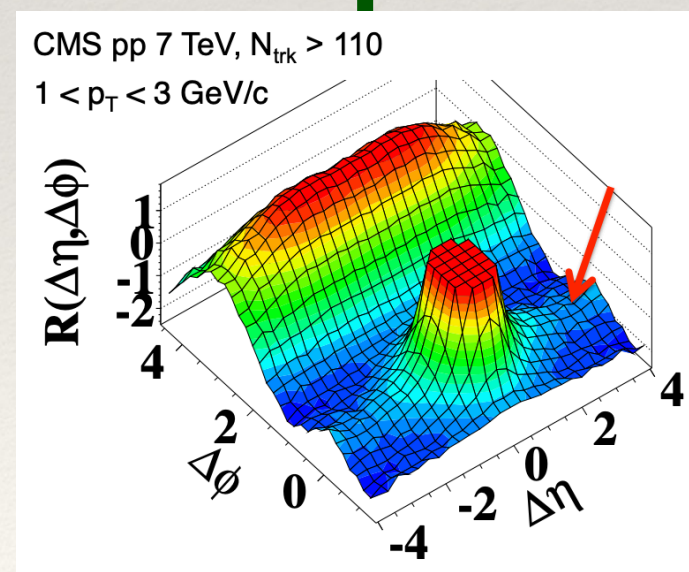
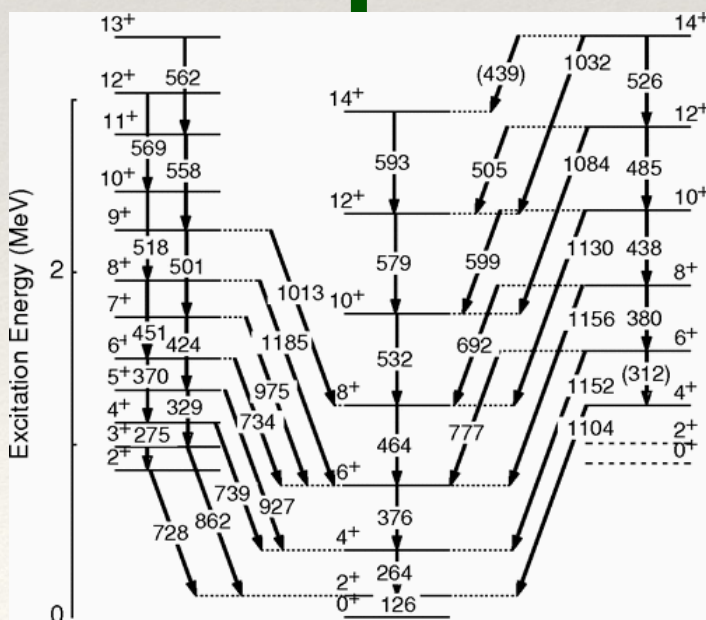




# Life of an Editor: A Timeline



K. M. O'Hara *et al.*,  
Science **298**, 2179 (2002)



CMS Collaboration (V. Khachatryan *et al.*),  
JHEP 09 (2010) 091, arXiv:1009.4122 [hep-ex].





**"If you can't say anything peer reviewed about your work, don't say anything at all."**



# Why journals, why PRL?

Distribution can be easily handled by arXiv so why the need for journals?

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## Observation of Squeezed States Generated by Four-Wave Mixing in an Optical Cavity

R. E. Slusher, L. W. Hollberg, B. Yurke, J. C. Mertz, and J. F. Valley  
Phys. Rev. Lett. **55**, 2409 – Published 25 November 1985; Erratum [Phys. Rev. Lett. 56, 788 \(1986\)](#)

An article within the collection: [The Physical Review Journals Celebrate The International Year of Light](#)

 More



**Credibility**

**Funding**

**Outreach**

**Media**



# Why journals, why PRL?

Distribution can be easily handled by arXiv so why the need for journals?

Featured in Physics

Editors' Suggestion

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## Observation of Gravitational Waves from a Binary Black Hole Merger

B. P. Abbott *et al.* (LIGO Scientific Collaboration and Virgo Collaboration)  
Phys. Rev. Lett. **116**, 061102 – Published 11 February 2016

**Physics** See Viewpoint: [The First Sounds of Merging Black Holes](#)



 More

**Credibility**

**Funding**

**Outreach**

**Media**



# Why journals, why PRL?

Distribution can be easily handled by arXiv so why the need for journals?



**Credibility**

**Funding**

**Outreach**

**Media**

You're not buying news when you buy The New York Times.  
You're buying judgment.

*-Arthur Ochs Sulzberger*



# Why journals, why PRL?

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**Credibility**

**Funding**

**Outreach**

**Media**

You're not buying news when you buy The New York Times.  
You're buying judgment.

*-Arthur Ochs Sulzberger*

A community driven filtration mechanism



## EDITORIAL

### OUR TENTH ANNIVERSARY

Ten years ago we started something new, a fast publishing Letters journal. We were told a variety of reasons why it could not be done, but we did it anyway. We can now ask whether our venture is a success.

From the technical point of view, the answer is definitely yes. Unlike most other specialized scientific journals, we combine the capability for very rapid publication of important contributions with the facilities and control that enable us to get our issues distributed on time. Much credit for this must be given to our production staff, and especially to our publication manager, M.J. Fleming, whose professional skill and organizing talent have kept our journal on the tracks for these ten years in spite of occasional crises.

Many people might measure our success in terms of the large number of journals that have followed our example. We believe, rather, that this shows only the need for journals of the kind we created.

We are not certain that we have been successful in achieving our original intentions. Our aim was to provide rapid publication of just those reports that might reasonably be expected to have immediate impact on the research of others. This can be done only by having a high rejection rate, about fifty percent in our case. In consequence, though we did not intend nor even foresee it, publication in Physical Review Letters has acquired a substantial prestige value—totally undeserved, because, as the former editor of another Letters journal has said, urgency is in no way the same as importance. Nevertheless, some authors will argue over long periods with the editors and referees to get their papers accepted as Letters. In some of these cases, quicker publication would have resulted if they had acceded immediately to publication in Article form,



Representation

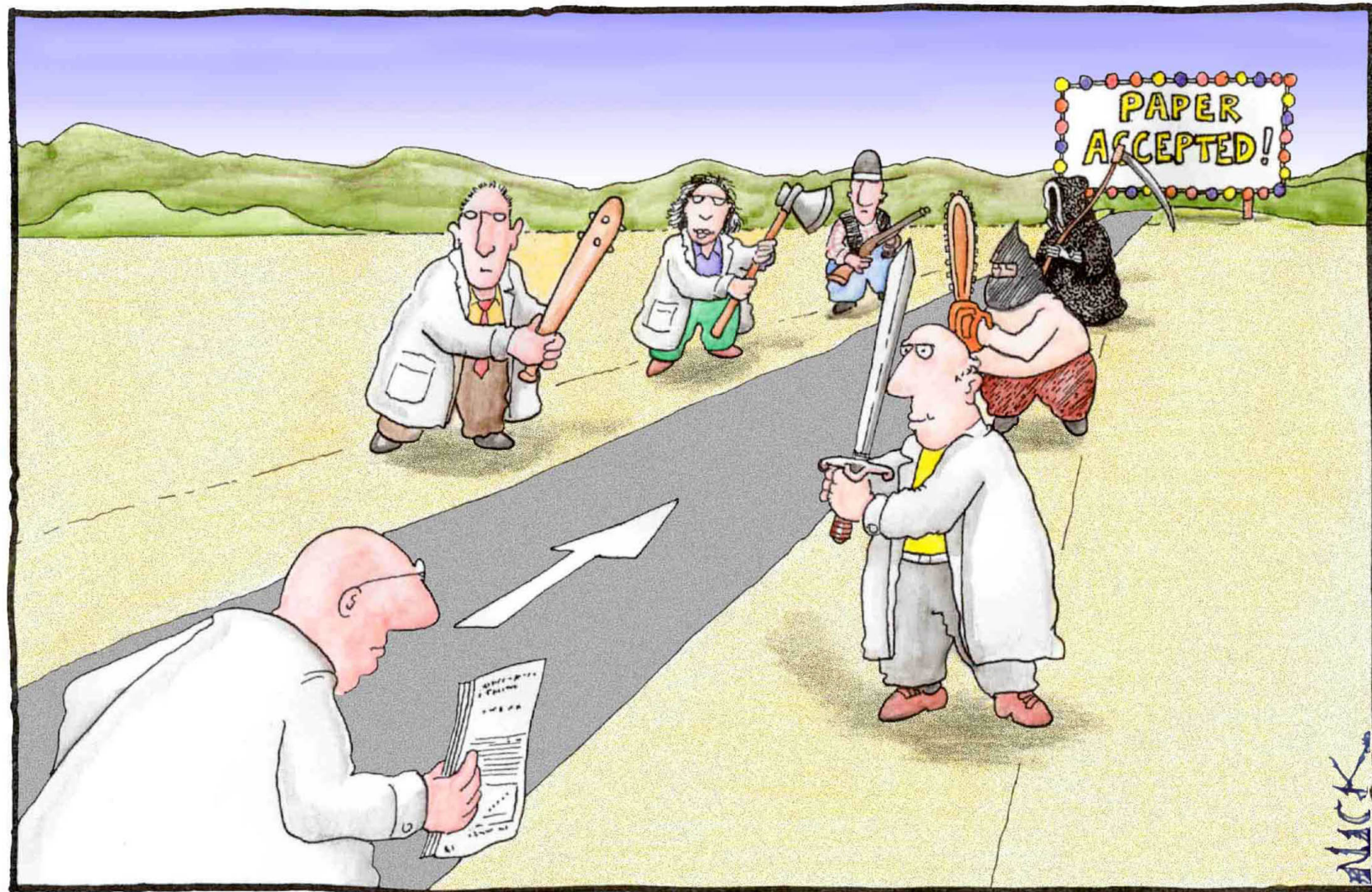
Breadth

Exclusivity

Size

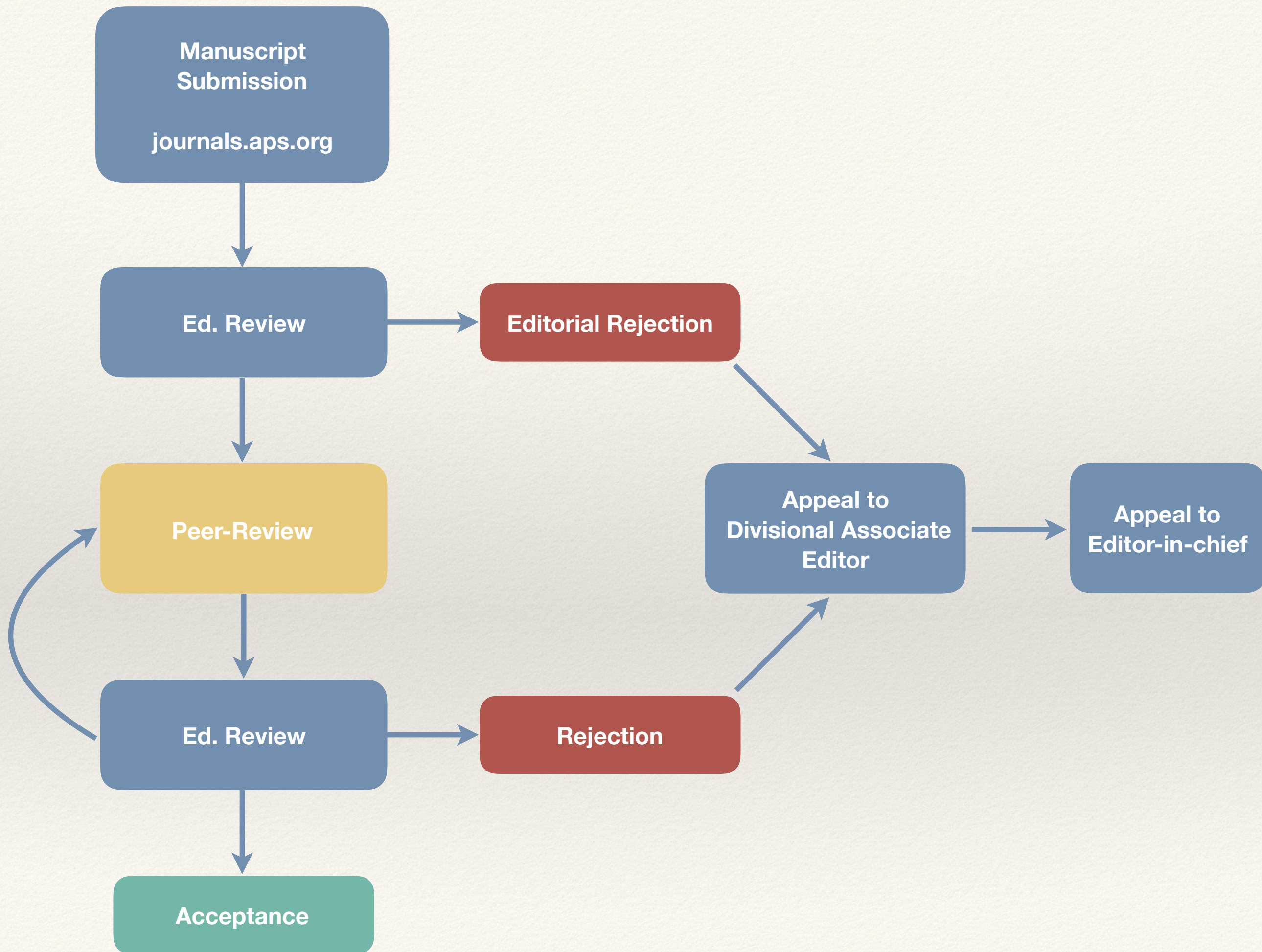






Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'







# Rejection without review

To be publishable in PRL a paper must do at least one of the following:

- Substantially advance a particular field;
- Open a significant new area of research;
- Solve a critical outstanding problem and therefore pave the way for notable progress in an existing field;
- Be of singular appeal to all physicists.

Please tell us in **100 or fewer words** why your paper is suitable specifically for PRL.\*



- Authors' Justification
- Input from colleagues and DAEs
- Editor's experience and judgment



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*ApJ rejected my manuscript, but did not give any reason.*

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*The solution presented in this Letter is intriguing and ought to have applications the author is not aware of.*

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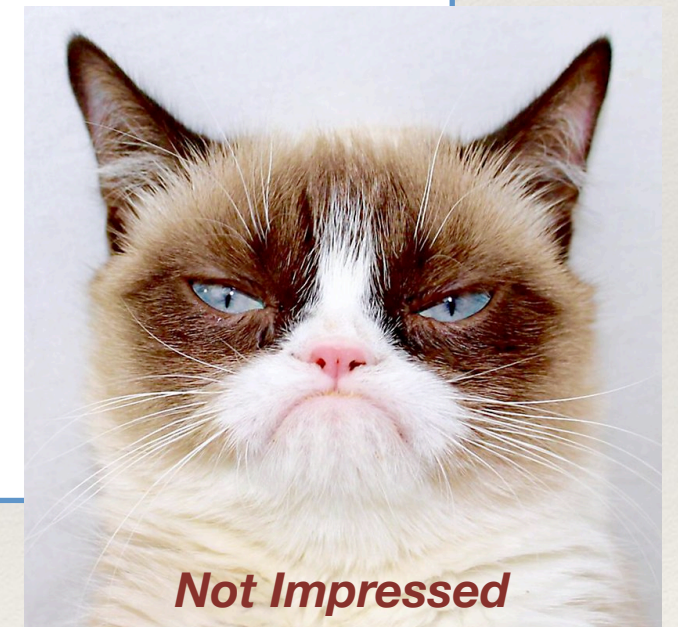
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databases  
(e.g. Web of Science)

Recommendations  
by Authors

???

Input from  
Editorial Board  
members

Referees' reviewing  
history  
(quality, timeliness)

Referees'  
publication records  
and experience

Physical Review's  
database of  
~60,000 referees





Third party bibliographic  
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(e.g. Web of Science)

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by Authors

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(quality, timeliness)

Referees'  
publication records  
and experience

Physical Review's  
database of  
~60,000 referees

Input from  
Editorial Board  
members



Referees selected and  
manuscript sent out for  
peer review



Working MS: **LL14509**Logged in as **kdusling****813832 DUSLING,KEVIN,,** (Dr. Kevin Dusling)Referrals: **5** (year) **0** (half-year) **0** (current) Last Report: **19Apr13** (DB11189:Institution: **BNL** Journals: **C,D** Last Updated By Referee: 16Jan13

\*\*\*\*EDITOR\*\*\*\* PRL: KD

Reports: 18  
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## Active Tasks for 813832 (All Tasks (1) short / long )

No active tasks

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Page 1 of 4

[Non-ms Correspondence](#)

Accode	Status	Opened	Closed	Type	Out	In	Eval	First Author and Title	MS Type
<a href="#">081113</a>	VP	12Apr13	19Apr13	RF	<a href="#">em</a> url	<a href="#">web</a> (v.1 <a href="#">txt</a> )	114	Hidveghesi - Simulating fermion production in (1+1) dimensional QCD	TH
<a href="#">071113</a>	INAC	01Apr13	04Apr13	RF	<a href="#">em</a> <a href="#">2 items</a> url	<a href="#">web</a> (v.1 <a href="#">txt</a> )	071	Hidveghesi - Estimation of electric conductivity of the quark-gluon plasma via asymptotic lattice-fermion colliders	TH
<a href="#">061113</a>	INAC	07Mar13	18Mar13	RF	<a href="#">em</a> url	<a href="#">web</a> (v.1 <a href="#">txt</a> )	162	Hidveghesi - First charge fluctuations in a signal of quark-gluon plasma from the Polyakov-loop-extended Nambu-Jona-Lasinio model	TH
<a href="#">081113</a>	VP	06Mar13	20Mar13	RF	<a href="#">em</a> url	<a href="#">web</a> (v.1 <a href="#">txt</a> )	231/2	Hidveghesi - Simulating fermion production in (1+1) dimensional QCD	TH



*And from referees...*



# And from referees...

In summary,  
the model is incorrect, the fits are incorrect,  
and the work is (incredibly) already published.



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In summary,  
the model is incorrect, the fits are incorrect,  
and the work is (incredibly) already published.

This paper should be rejected for the following reasons  
No one cares about this anymore  
Anyone who could referee it is probably dead  
All who read it will wish they were



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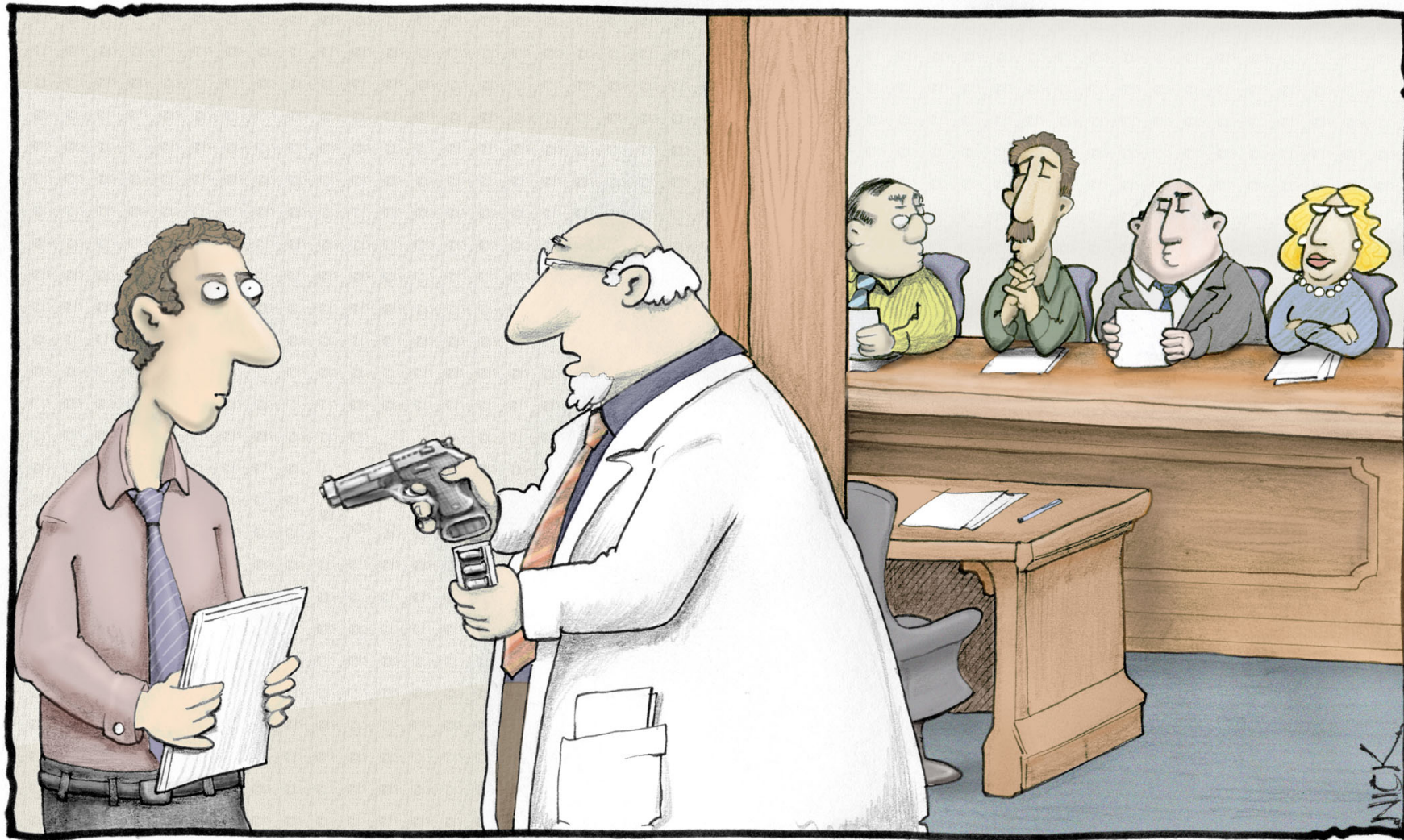
*Not only is this paper wrong, but I did it first!*

*This paper is a strange case of a dead metaphor coming to life.*

The memory is fresh in my mind of how well PRL handled our recent submission. I was happy to "pay it forward" to another excellent paper such as this one.



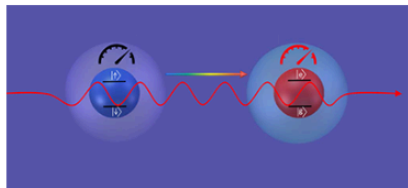
# Post-acceptance dissemination



*"Change of plan. The policymakers say they're only willing to listen to the science if we can present our ideas in simple bullet-point format."*



# Editors' Suggestions



## EDITORS' SUGGESTION

### Experimental Verification of a Jarzynski-Related Information-Theoretic Equality by a Single Trapped Ion

Strong spin-orbit coupling in an iridate compound causes anisotropic lattice expansion when a small current is applied.

T.P. Xiong *et al.*

[Phys. Rev. Lett. 120, 010601 \(2018\)](#)

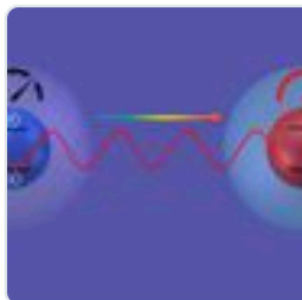


Editorial: A Decade of Editors' Suggestions  
[Phys. Rev. Lett. 118, 030001](#)



**Physical Review Lett** @PhysRevLett · Jan 5

Using a single trapped ion to demonstrate an equality relating nonequilibrium quantum thermodynamics and mutual information



### Experimental Verification of a Jarzynski-Related Inf...

Strong spin-orbit coupling in an iridate compound causes anisotropic lattice expansion when a small current is applied.

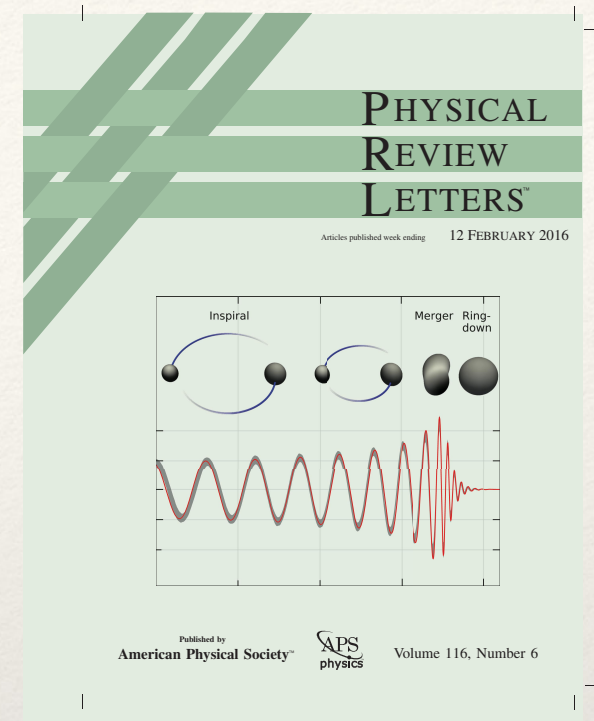
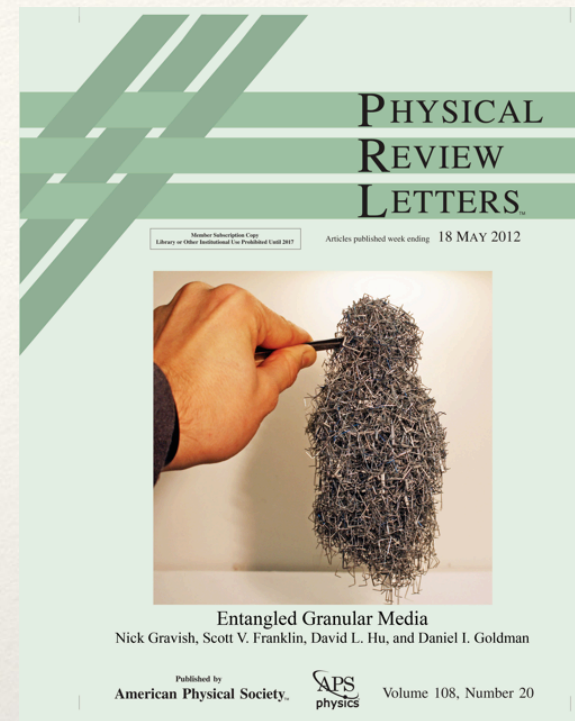
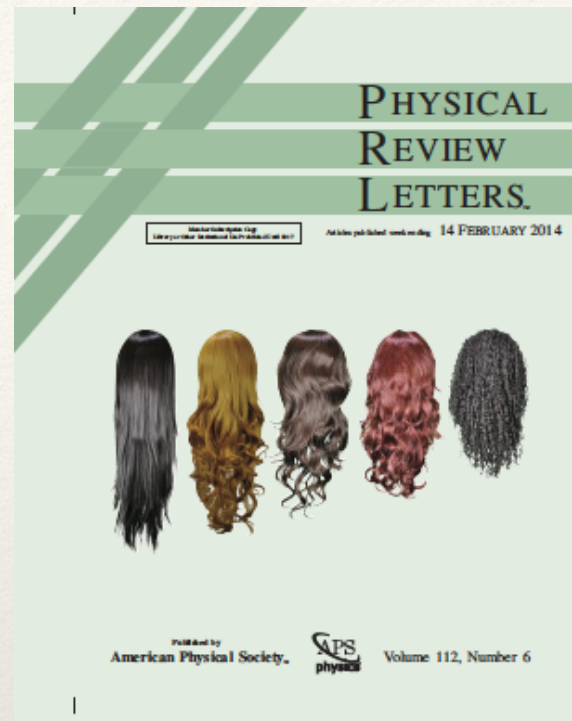
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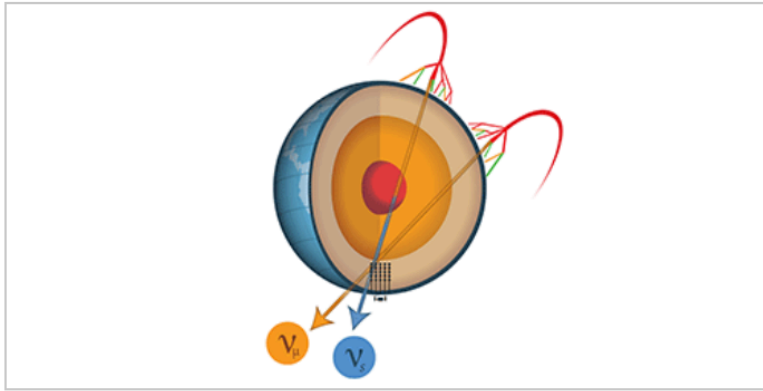


# Highlighting





# Physics

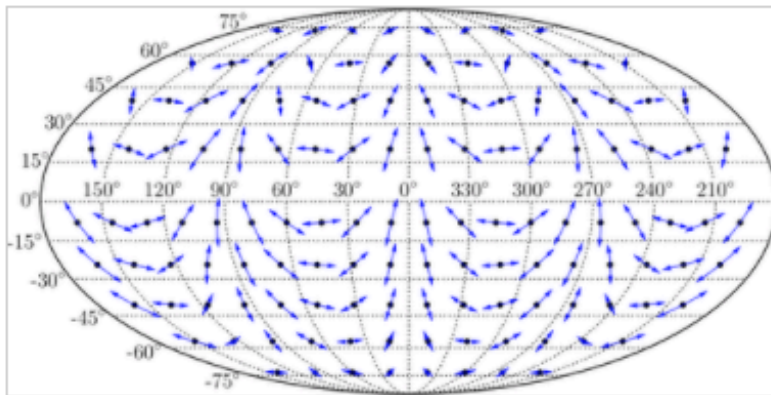


## PARTICLES AND FIELDS

### Viewpoint: Hunting the Sterile Neutrino

David W. Schmitz – August 8, 2016

A search for sterile neutrinos with the IceCube detector has found no evidence for the hypothetical particles, significantly narrowing the range of masses that a new kind of neutrino could possibly have. [Read More »](#)

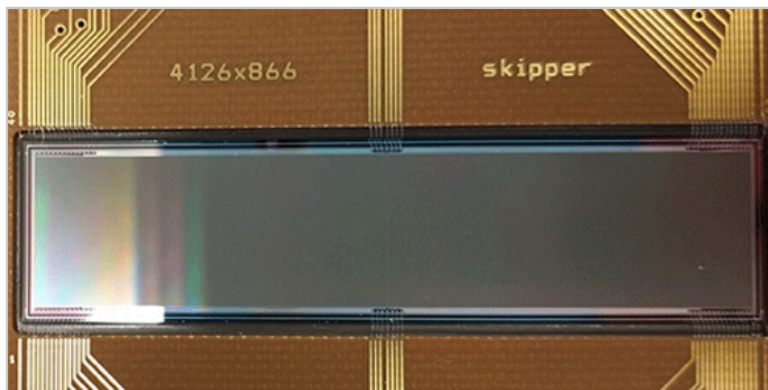


## ASTROPHYSICS

### Focus: Detecting Gravitational Waves by Watching Stars

December 29, 2017

A passing gravitational wave produces shifts in the apparent positions of the stars, and these motions should be detectable with the Gaia space telescope. [Read More »](#)



## SEMICONDUCTOR PHYSICS

### Synopsis: Single-Electron Sensitivity in CCD Pixels

September 26, 2017

A CCD design relying on multiple charge measurements has achieved a precision that allows the detection of a single electron per pixel. [Read More »](#)



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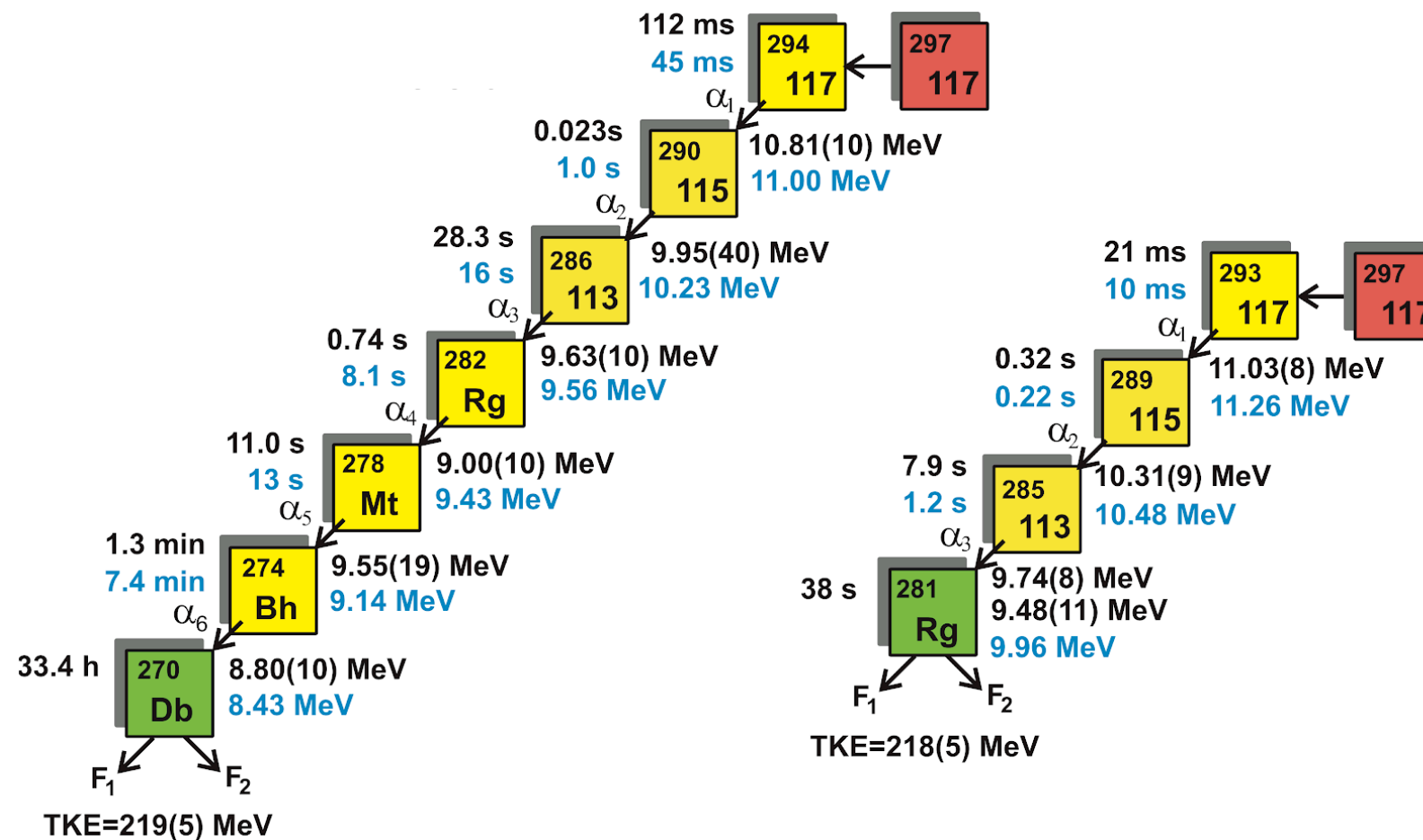
# What Editors do

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- ❖ Science: Run the peer-review process
- ❖ Keep up to date in all scientific developments
- ❖ Attend conferences, visit labs and universities
- ❖ Encourage submission of the best research
- ❖ Discuss publication related matters with authors, referees, deans, funding agencies, ...
- ❖ Dissemination and publicity
  - ❖ Social media, website, journalists, ...
- ❖ Editorial initiatives
  - ❖ Editor suggestions, Taxonomy, submission server, ...



# Transuranium elements and the Physical Review



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We need your engagement and feedback

*Thanks for your attention!*

*[kdusling@aps.org](mailto:kdusling@aps.org)*



@PhysRevLett

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# New Referees

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- What we look for in our referees:
  - Favorable publication record
  - Current academic / research position
  - Senior grad students: ask your advisors to write a joint
- Supply expertise in which you have worked and published  
(Not those which interest you or are following casually)
- Please keep your expertise and contact information up to date

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# SCOAP<sup>3</sup> and Physical Review journals

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High Energy Physics papers published after January 1, 2018 in *Physical Review Letters*, *Physical Review C*, and *Physical Review D* are published open access, paid for centrally by SCOAP<sup>3</sup>.

HEP papers covered by SCOAP<sup>3</sup> are all those posted on arXiv.org prior to publication with a *primary* category of **hep-ex**, **hep-th**, **hep-ph**, or **hep-lat**.

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## 2018 Nobel Prize in Physics



Acceleration and Trapping of Particles by  
Radiation Pressure (PRL 1970)  
Trapping of Atoms by Resonance Radiation  
Pressure (PRL, 1978)  
Experimental Observation of Optically  
Trapped Atoms (PRL, 1986)

## Recent Nobel Prizes & *Phys. Rev.*

### 2017 Nobel Prize in Physics



Observation of gravitational waves from a binary black  
hole merger (PRL, 2016)  
GW151226: Observation of gravitational waves from a  
22-solar-mass binary black hole coalescence (PRL,  
2016)  
GW170104: Observation of 50-solar-mass binary black  
hole coalescence at redshift 0.2 (PRL, 2017)

### 2015 Nobel Prize in Physics



Evidence for Oscillation of Atmospheric Neutrinos  
(PRL, 1998)  
Direct Evidence for Neutrino Flavor Transformation  
from Neutral-Current Interactions in the Sudbury  
Neutrino Observatory (PRL, 2002)



### 2016 Nobel Prize in Physics



Universal jump in the superfluid density of two-  
dimensional superfluids (PRL, 1977)  
Quantized Hall Conductance in a Two-Dimensional  
Periodic Potential (PRL, 1982)  
Nonlinear Field Theory of Large-Spin Heisenberg  
Antiferromagnets: Semiclassically Quantized Solitons of  
the One-Dimensional Easy-Axis Néel State (PRL, 1983)  
Model for a Quantum Hall Effect without Landau Levels:  
Condensed-Matter Realization of the "Parity  
Anomaly" (PRL, 1988)

### 2014 Nobel Prize in Chemistry



Optical detection and spectroscopy of single  
molecules in a solid (PRL, 1989)